Applicants acknowledge with appreciation the indication that Claims 8-10 contain allowable subject matter. Newly added Claims 11-13 correspond to the subject matter of Claims 8-10. It is therefore respectfully submitted that Claims 11-13 patentably distinguish over the references of record and are in condition for allowance.

Regarding the objection to Claim 4 under 37 C.F.R. § 1.75(c), Claim 4 has been cancelled by this amendment. It is therefore respectfully submitted that this objection has been obviated.

Turning now to the rejection of Claims 1-4 under 35 U.S.C. § 103(a) as unpatentable over Heinemann (the publication) in view of JP 62-184698 (hereafter JP '698), this rejection is traversed. According to amended Claim 1, the nozzle is arranged to eject molten metal on a surface of a cooling roll in a direction of collision with the roll. The first cooling roll is adapted to quench molten metal ejected from the nozzle to produce metal thin bodies and to fly the produced metal thin bodies. At least a second cooling roll on which the flown bodies are hit into metal flakes also solidifies the molten metal. Through the configuration of Claim 1, metal thin bodies may be effectively produced.

Heinemann relates to an apparatus for producing metal particles. In the apparatus of Heinemann, molten metal is injected into a gap between contra-rotating rolls to produce particles. The produced particles are air cooled, water quenched, or splat cooled on a third roll rotating perpendicularly to the first and second rolls.

However, through the configuration of Heinemann, if the gap is smaller, a continuous thin strip may be produced instead of particles. If the gap of Heinemann is larger, molten metal does not readily contact the rolls, resulting in a substantial reduction of cooling efficiency. Therefore, it is evident from this description that the configuration described in Heinemann is not capable of producing the same kind of metal flakes as the present invention according to Claim 1.

It is respectfully submitted that JP '698 does not remedy the defects above-noted with regard to Heinemann. Specifically, JP '698 describes a method and an apparatus for producing a continuous metal strip. According to JP '698, molten metal is supplied on an upper surface of one of the contra-rotating rolls in a direction of collision, to produce a metal strip having one surface being cooled and the other surface uncooled. The produced strip is guided between a gap of the rolls so that the free surface of the strip is forcibly cooled.

As is evident from this description, the techniques disclosed in JP '698 do not in any way disclose or suggest forming metal flakes, as JP '698 relates to producing a continuous metal strip using a gap between the contra-rotating rolls.

Consequently, as neither Heinemann nor JP '698 discloses or suggests the limitations recited in Claim 1, it is respectfully submitted that Claim 1 patentably distinguishes over Heinemann and JP '698, either alone or in combination. Likewise, it is respectfully submitted that dependent Claims 2, 3, and 5-7 patentably distinguish over the combination of Heinemann and JP '698, for the reasons above set forth with regard to Claim 1, from which these claims depend. It is therefore respectfully requested that this rejection be withdrawn.

Moreover, it is respectfully submitted that there is no motivation in the teachings of either Heinemann or JP '698 to support the applied combination. Certainly, the Office Action fails to cite to any specific teachings in either Heinemann or JP '698 to support the proposed combination. Therefore, it is respectfully submitted that the combination of Heinemann with JP '698 is based solely upon hindsight reconstruction.

Consequently, in view of the foregoing discussion and present amendments, it is respectfully submitted that this application is in condition for allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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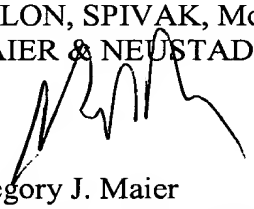

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IN THE CLAIMS

Please amend the claims as shown below:

1. (Twice Amended) A metal-flake manufacturing apparatus comprising, a first cooling roll, a nozzle is arranged to eject molten metal on a surface of the first cooling roll not tangentially but in a direction of collision with the latter, said first cooling roll adapted to quench the molten metal from the nozzle through collision into metal thin bodies and fly the produced metal thin bodies, and at least a second cooling roll on which the produced flown metal thin bodies are hit into flakes, said second cooling roll also serving for solidification of the molten metal not solidified by the first cooling roll, said cooling rolls being spaced apart by a gap of a size greater than thickness of metal thin bodies.

Claim 4 (cancelled).

Claims 11-13 (new).